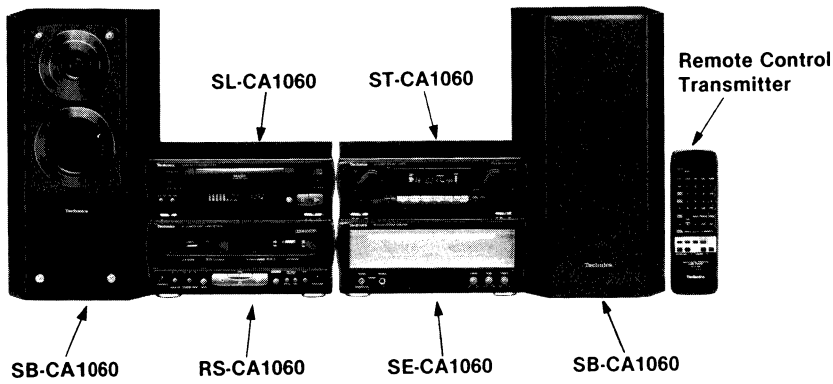
ORDER NO. AD9406170C2

Service Manual

Stereo Tuner

Tuner

ST-CA1060



Colour

(K) ... Black Type

Areas

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EG)	Germany and Italy.	

System: SC-CA1060

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

■ SPECIFICATIONS

■ Pre-amplifier section

Input sensitivity/impedance
- **PHONO** 2.5 mV/47 kΩ
- **DCC, (VDP, VCR1, VCR2)** 250 mV/15 kΩ

Output level
- **VCR1/DCC RECOUNT** 150 mV/1.5 kΩ

Frequency response
- **PHONO** 30 Hz – 15 kHz/ + 1.5 to – 2.0 dB
- **DCC, (VCD, VCR1, VCR2)** 20 Hz – 40 kHz

■ FM tuner section

Frequency range 87.50 – 108.00 MHz (0.05 MHz steps)

Sensitivity 1.8 µV (IHF usable)
- **S/N 26 dB** 1.5 µV

S/N
- **MONO** 70 dB (75 dB, IHF)

Stereo separation 1 kHz 35 dB

Antenna terminal(s) 75 Ω (unbalance)

■ AM tuner section

Frequency range
- **MW** 522 – 1611 kHz (9 kHz steps) 530 – 1620 kHz (10 kHz steps)
- **LW** 144 – 288 kHz (9 kHz steps)

Sensitivity (S/N 20 dB)
- **MW** 500 µV/m
- **LW** 50 µV

■ Timer section

Clock Quartz-lock type

Function 24-hour programmable; Play timer (1 time), Rec timer (1 time), Sleep (120 min., 1 mn. intervals)

Setting 1 minute – 23 hours 59 minutes (1 mn. intervals)

■ General

Dimensions (W × H × D) 280 × 89 × 287 mm

Weight 1.75 kg

Notes:
1. Weight and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.

System	Stereo Tuner	Compact disc player	Stereo Amplifier	Cassette deck	Speaker
SC-CA1060	**ST-CA1060**	SL-CA1060	SE-CA1060	RS-CA1060	*SB-CA1060

*Made in PAES

Technics®

■ CONTENTS

	Page
INSTALLATION	2
LOCATION OF CONTROLS	3
SETTING THE TIME	3
CONECTIONS	4, 5
CONCERNING THE REMOTE CONTROL	5, 6
QUICK REFERENCE OF REMOTE CONTROL OPERATION	6, 7
OPERATION CHECKS AND MAIN COMPONENTS REPLACEMENT PROCEDURES	8, 9
POWER SUPPLY WITH TUNER ST-CA1060	9
REPLACEMENT OF THE FOOT	10
TERMINAL FUNCTION OF IC	10
SCHEMATIC DIAGRAM	11~20
BLOCK DIAGRAM	21, 22
PRINTED CIRCUIT BOARDS	23~26
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES	27
WIRING CONNECTION DIAGRAM	27
REPLACEMENT PARTS LIST	28, 29, 33
RESISTORS AND CAPACITORS	30, 31
CABINET PARTS LOCATION	32

Note: Refer to the replacement Accessories and Packaging of Service manual for Model No. SE-CA1060 (E, EB, EG), Order No. AD9406171C8.

■ INSTALLATION

Stacking the components

Install the various components as shown in the illustration.

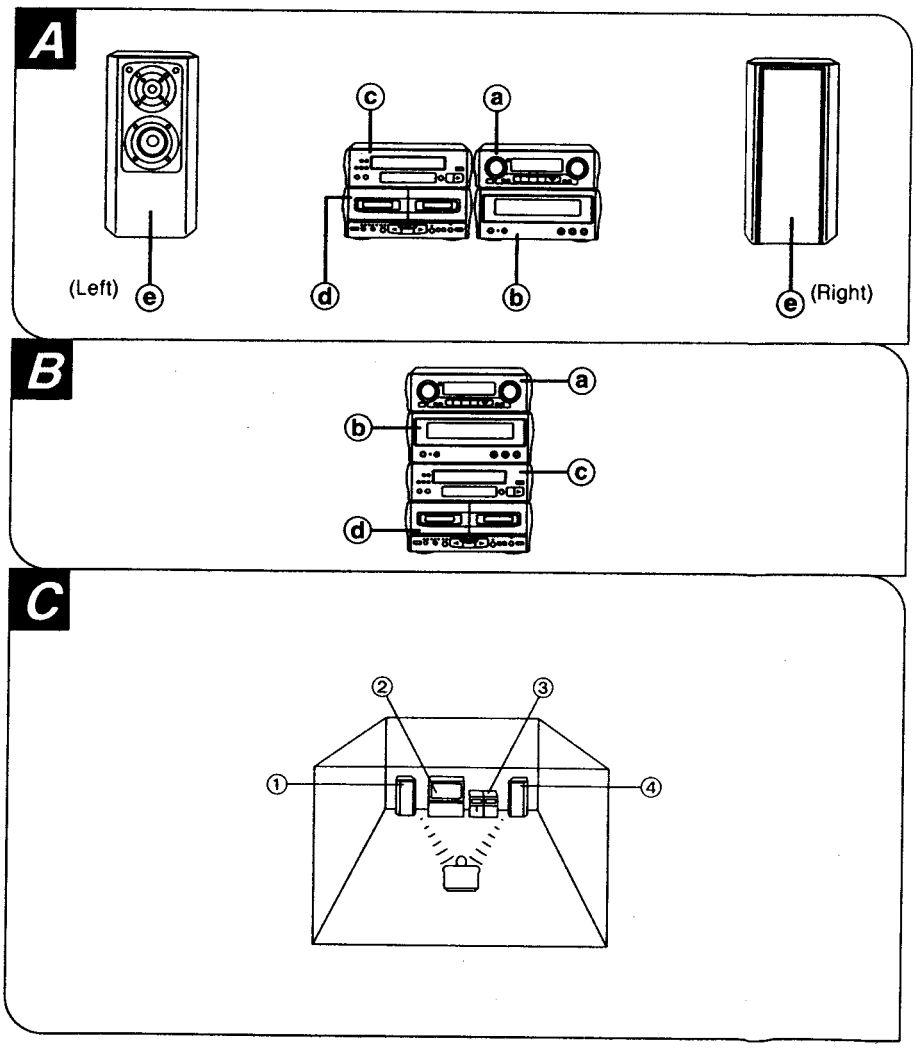
System		SC-CA1060
ⓐ	Stereo tuner	ST-CA1060
ⓑ	Power amplifier	SE-CA1060
ⓒ	Compact disc player	SL-CA1060
ⓓ	Cassette deck	RS-CA1060
ⓔ	Speakers	SB-CA1060

Horizontal stacking A

Vertical stacking B

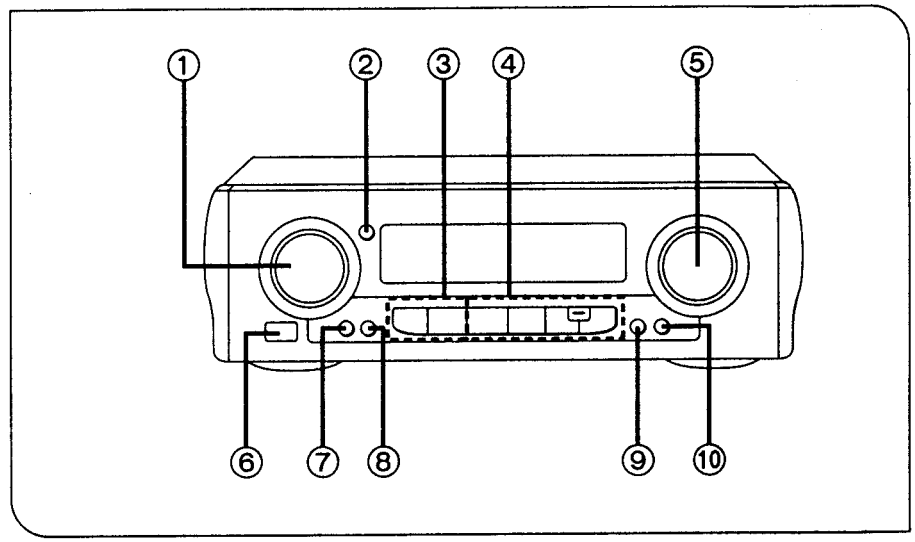
System layout example C

To produce a better stereo sound, install both speakers away from the system.
① Left speaker
② Television set (not included)
③ This system
④ Right speaker



■ LOCATION OF CONTROLS

Stereo tuner section



① JOG control
② Set button
③ External source input select button
④ Internal source input select button
⑤ Volume control
⑥ Remote control signal sensor
⑦ Clock/timer button
⑧ Tuning mode select button
⑨ Record timer button
⑩ Play timer button

■ SETTING THE TIME

This is a 24-hours display clock.
These instructions explain how to set the timer for 16:25 (4:25 p.m.) on Wednesday.

1 **Switch on the power on the power amplifier.**

2 ① **Press CLOCK/TIMER to select "CLOCK".**

- The "CLOCK" display will soon disappear, but you can proceed to the next step within 22 seconds.

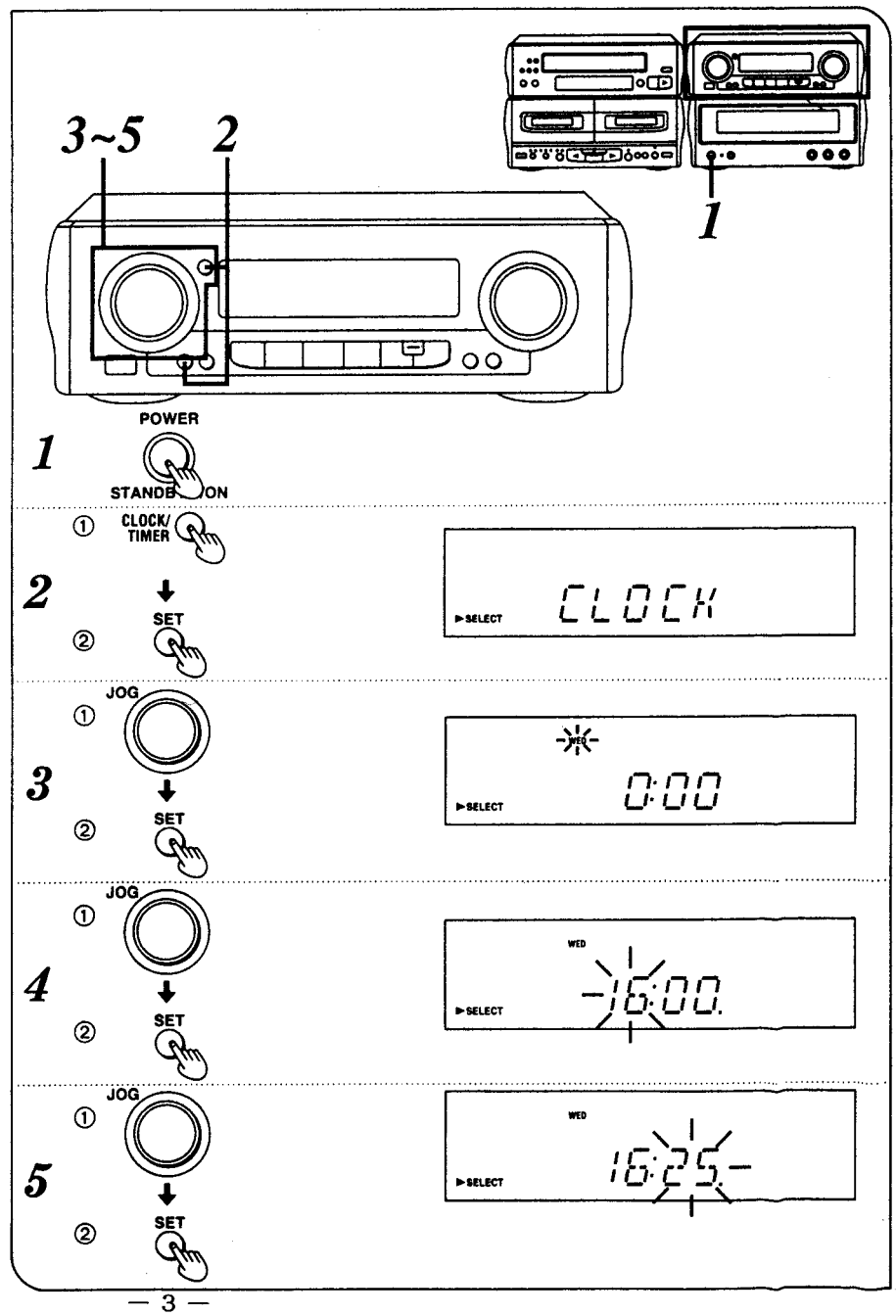
② **Press SET.**

3 ① **Turn JOG to select the day.**
② **Press SET.**

4 ① **Turn JOG to select the hour.**
② **Press SET.**

5 ① **Turn JOG to select the minutes.**
② **Press SET to finish setting the time.**

The display will return to the previous display after about 2 seconds.



When "0:00:" flashes on the display:
It appears when you connect the power supply cord for the first time or if there has been a power failure.
If this happens, reset the time.

If the minutes setting has gone wrong:
1. Press CLOCK/TIMER.
2. Press SET 3 times.
3. Turn JOG to set the minute, and then press SET.

To display the clock again:
Press CLOCK/TIMER.
To return to the previous display, press CLOCK/TIMER four times. (or when 22 seconds have passed, the previous display will be returned automatically.)

■ CONNECTIONS

Connect the AC power supply cord after you have connected all other cables.

1 Connect the flat cables.

Hold the connector with the recessed part up and press in at the center until you hear a click.

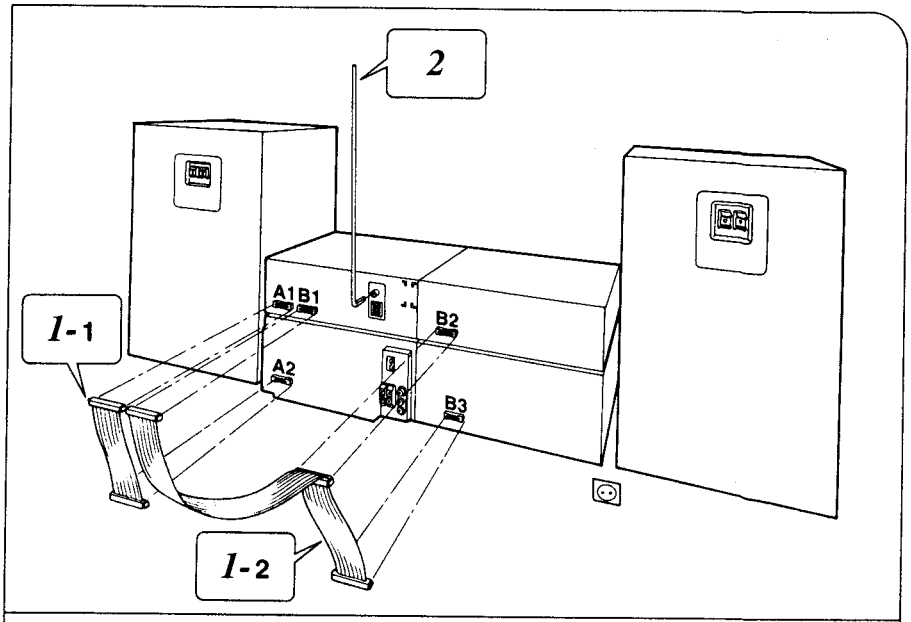
1. Connect the shorter flat cable to the terminal of the tuner/pre-amplifier and power amplifier.
2. Connect the longer flat cable to the terminal of the tuner/pre-amplifier, compact disc player, and cassette deck.
   Route the cable horizontally (underneath the heat outlet grille) so that the side with the white-color lead is positioned at the front.

Be sure to connect the blue-colored connector to B1 (tuner/pre-amplifier).
After connection, hold and press the cable as flat to the back of the unit as possible (To minimize noise pickup while listening an AM broadcast).

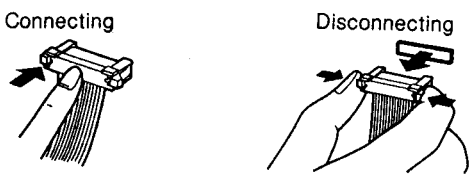
Do not try connecting or disconnecting the flat cables while the power is switched to ON.

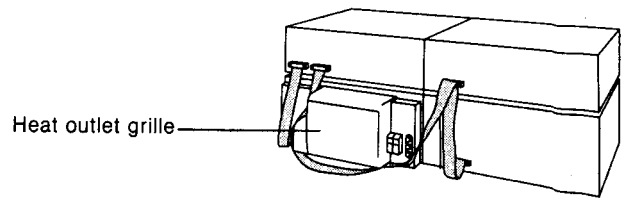
2 Connect the FM indoor antenna.

Install the antenna on a wall at a height and in a direction which result in the best reception.
The tip of the internal antenna wire should not come into contact with any metal objects.
When you cannot get a good reception with this FM indoor antenna, we recommend you install an FM outdoor antenna (not included).

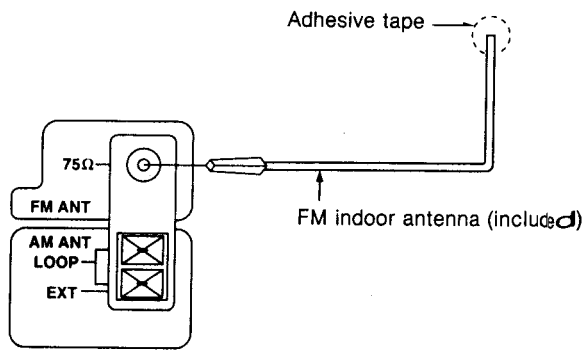


1





2



External unit connection

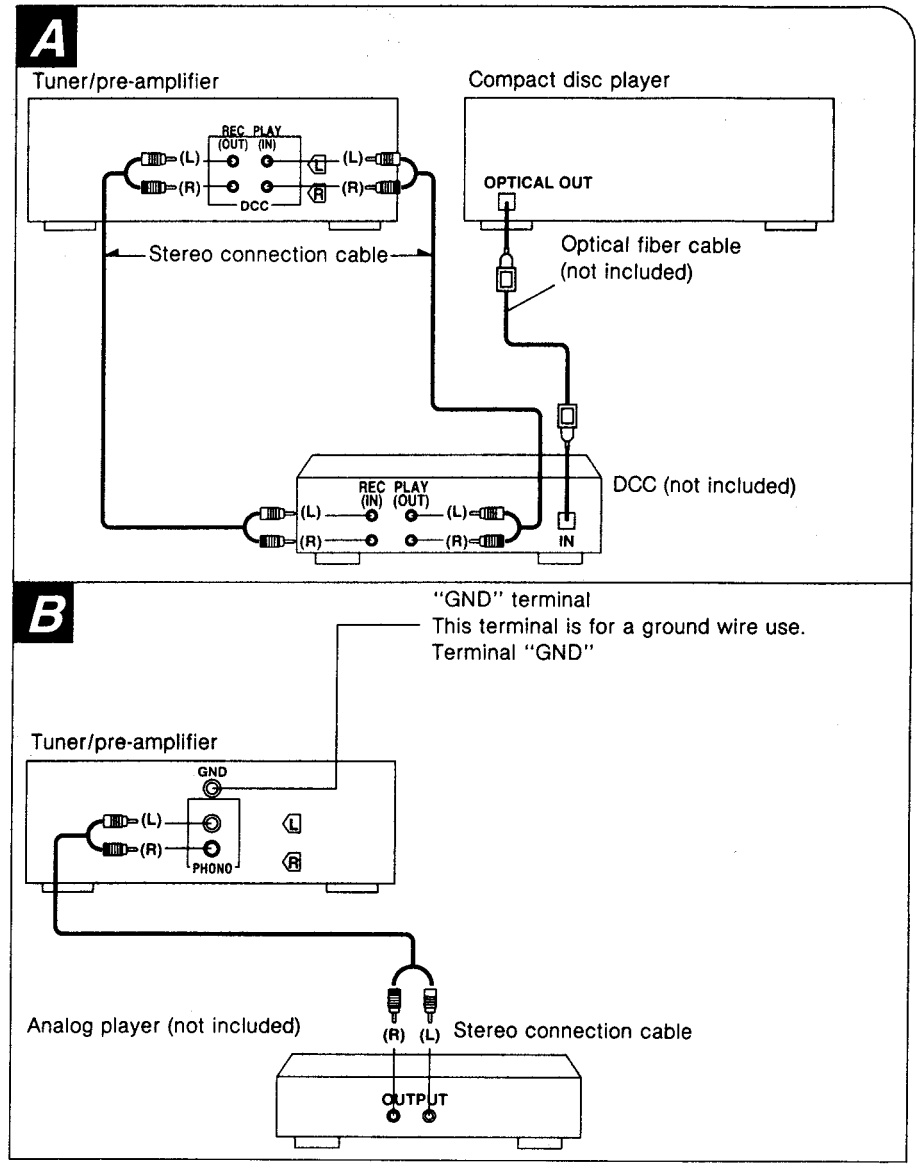
DCC (digital compact cassette deck) A

You can make a digital recording on the DCC deck with the optical fiber cable (not included) as shown in the illustration.

Analog player B

Note

- Stereo connection cable, video connection cable, optical fiber cable—not included



■ CONCERNING THE REMOTE CONTROL

Battery installation A

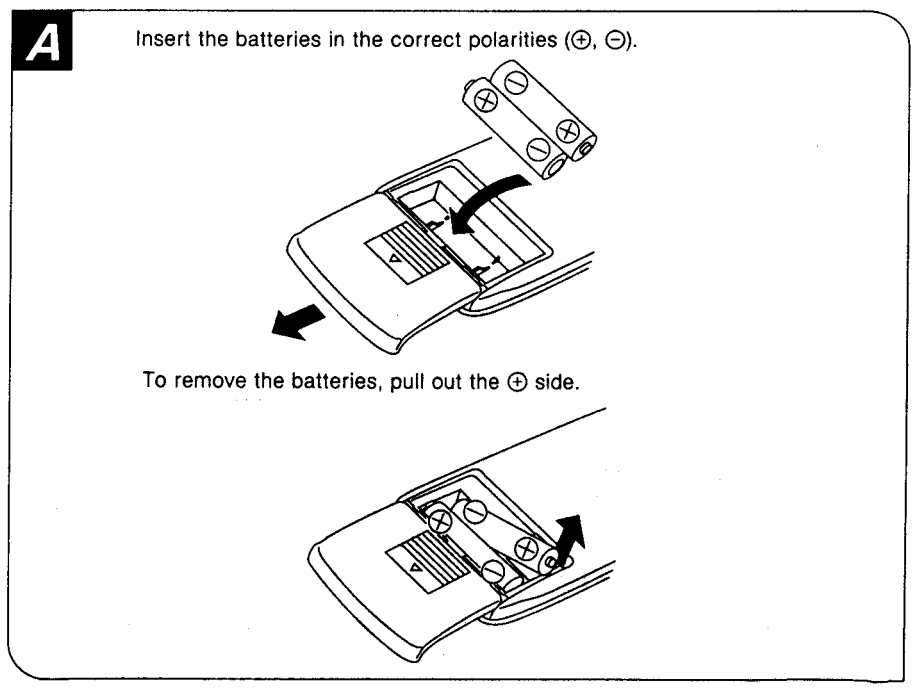
Use of batteries

- Do not mix old and new batteries, or batteries of different types (carbon and alkaline, etc.).
- Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.
- If the remote control is not to be used for a long period of time, remove the batteries and store them in a cool, dark place.
- Do not attempt to recharge alkaline or carbon batteries.

Battery life

The battery life is about one year.

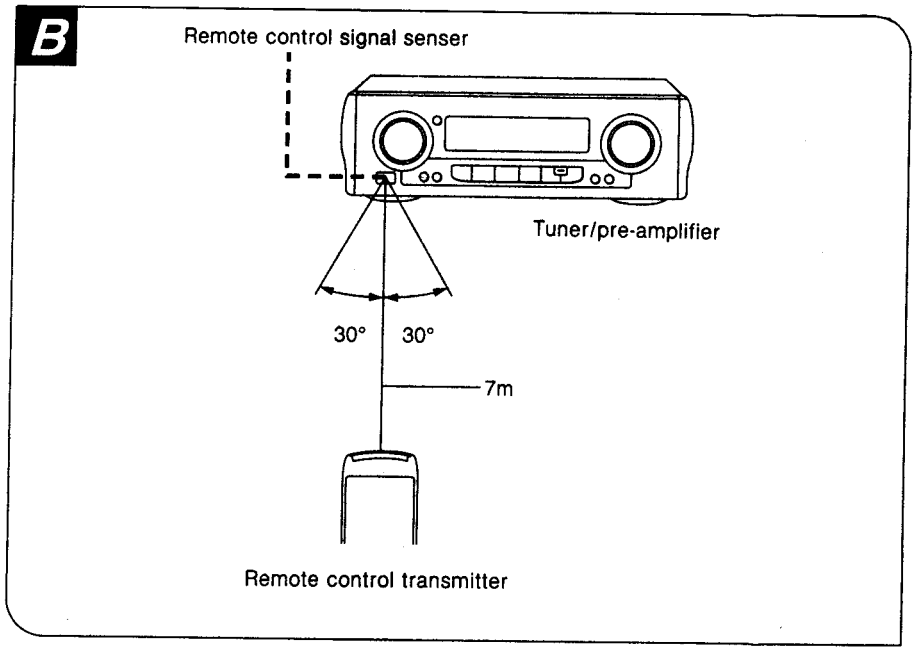
The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.



Correct method of use B

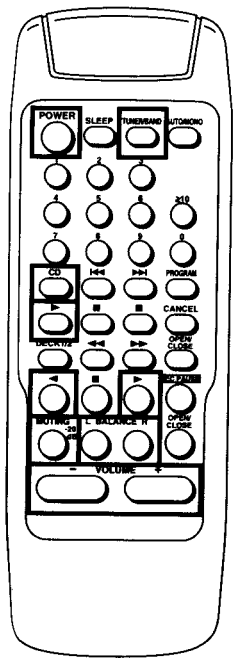
Operation notes

- Aim the remote control's transmission window toward the unit's sensor. Avoid any obstacles.
- Be sure the transmission window and the unit's sensor are free from dust. Excessive dust might affect its performance.
- The operation may not be correct if direct sunlight or other strong light source strikes the receiving sensor of this unit. If there is a problem, place the unit away from the light source.
- If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote control a shorter distance from the system.
- Never place heavy items.
- Do not disassemble or reconstruct.
- Do not spill water or other liquids.



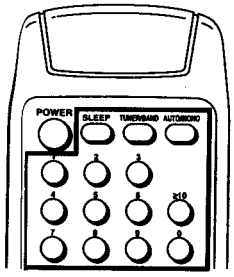
■ QUICK REFERENCE OF REMOTE CONTROL OPERATIONS

Common operation



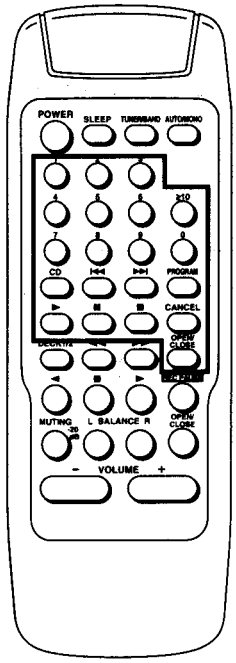
Switching the system on and power standby mode	POWER
Starting play directly from the power standby condition	▶ TUNER/BAND ◀ ▶
Selecting the input source	CD TUNER/BAND
Adjusting the volume	− VOLUME +
Adjusting the volume balance	L BALANCE R
Muting the volume temperarily	MUTING -20 dB

Tuner/timer operation



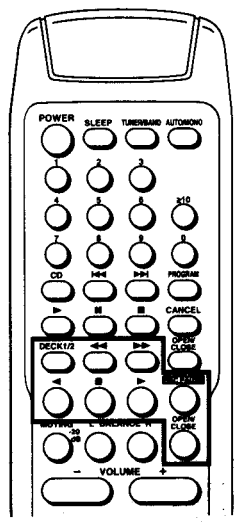
Listening to radio broadcasts	TUNER/BAND →
Switching between FM stereo mode and monaural	AUTO/MONO
Operating/releasing the sleep timer	SLEEP

Compact disc section



Opening or closing the disc tray	OPEN/ CLOSE
Starting play	▶
Temporarily stopping play	⏸
Stopping play	■
Skipping tracks	⏮ ⏭
Starting play from a particular track	CD → 1 2 3 4 5 6 7 8 9 10 +10
Playing the particular track you programmed	CD → PROGRAM → 1 2 3 4 5 6 7 8 9 10 +10 → ▶
Cancelling the particular track you programmed	CD → CANCEL → 1 2 3 4 5 6 7 8 9 10 +10 → CANCEL

Tape section



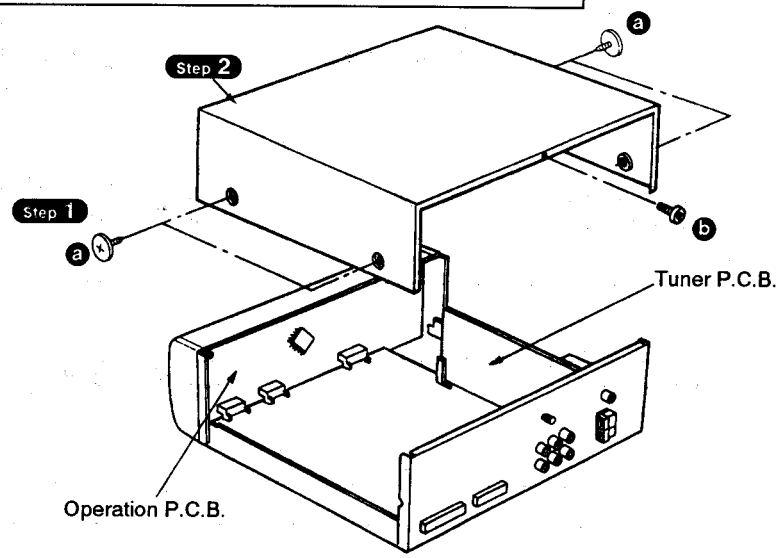
Switching between deck 1 and deck 2	DECK1/2
Opening or closing the cassette holder	OPEN/ CLOSE
Starting playback	◀ ▶
Finding the beginning of a track	During playback ◀◀ ▶▶
Fast forwarding or rewinding the tape	In stop mode ◀◀ ▶▶
Stopping playback	■
Recording	REC PAUSE → ◀ ▶

■ OPERATION CHECKS AND MAIN COMPONENT REPLACEMENT PROCEDURES

NOTE

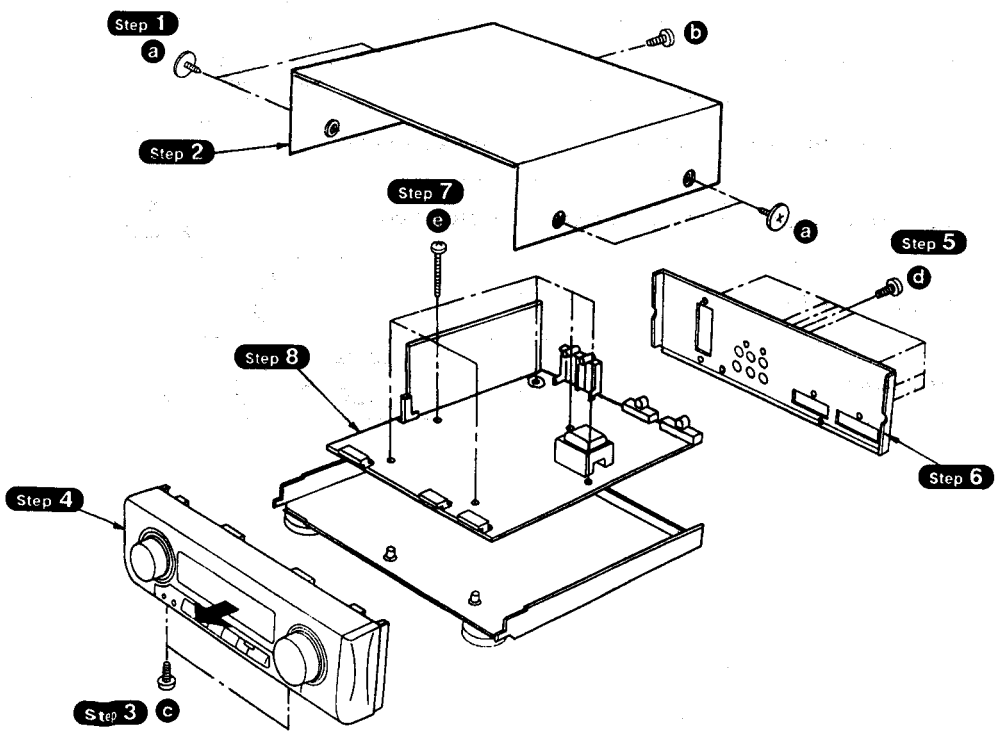
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Illustrated screws are equivalent to actual size.

1. Checking for the tuner P.C.B. and operation P.C.B.

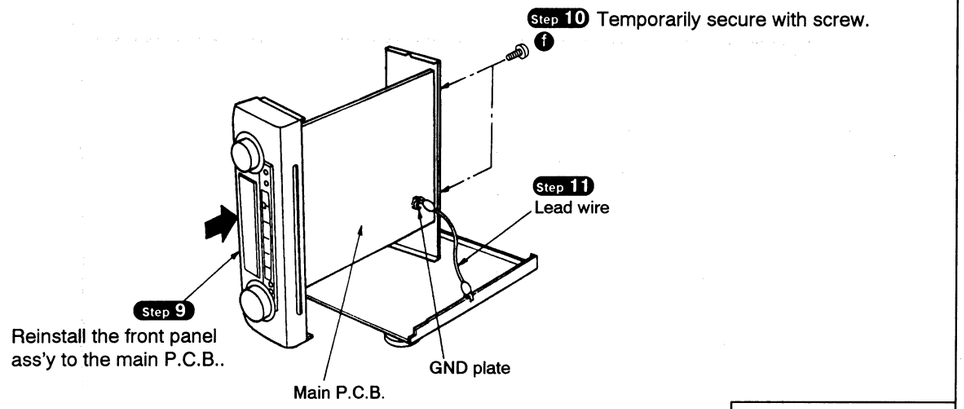


ⓐ (Black)
[RHD30007]
ⓑ (Black)
[XTBS3+8JFZ1]

2. Checking for the main P.C.B.



ⓐ (Black)
[RHD30007]
ⓑ (Black)
[XTB3+8JFZ]
ⓒ, ⓓ (Black)
[XTBS3+8JFZ1]
ⓔ (Black)
[XTB3+16JFZ]



■ POWER SUPPLY WITH TUNER ST-CA1060

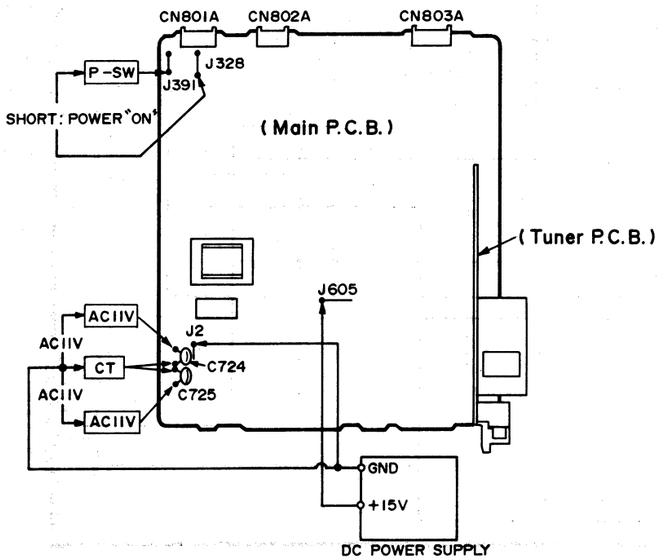
Power Supply to Main PCB

1. Apply 11 V AC power between C724 and C725 using the service tool for AC power supply as shown below.
   (The unit comes to STAND BY Mode.)
2. Short the point [P-SW] (J391) to the J328 as shown below.
   FL display tube lights and the unit comes to power ON mode.

Power Supply to Tuner PCB

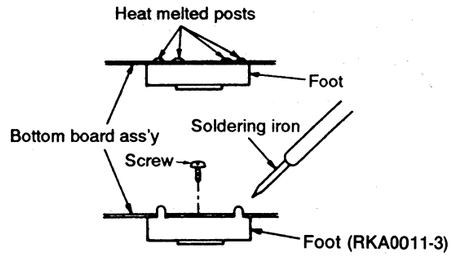
1. Apply 15 V DC power to [J605] and [J2] using the service tool for DC power supply as shown below.

Note: When applying DC power, connect between GND [CT] using the tool.



■ REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0011-3) on the Bottom board ass'y melt the 4 posts with a soldering iron or install it with a screw (XTB3+6J).



■ TERMINAL FUNCTION OF IC

• IC801 (M38173M6276F): System control/FL drive

Pin No.	Terminal Name	I/O	Function
1	CR TIMER	O	Condensor/resistance oscillation terminal for an electronic failure detection
2	KEY2	I	Operation (MULTI CONTROL) key signal input
3	KEY1	I	Operation key signal input
4	/SD	I	SD signal input for tuner
5	/STEREO	I	STEREO signal input for tuner
6	STB• LATCH	O	Latch signal output
7	CE1	O	Chip enable signal output
8	CLK1	O	Clock signal output
9	DATA	O	Data signal output
10	DATA IN	I	Data signal input
11	A. MUTE	O	Audio muting signal output (Volume of −10dB and less: "H")
12	MUTE	O	Main muting signal output (Normally "L")
13	CLK2	O	Serial clock output
14	CLK3	O	Serial data output
15	B.DATA IN	I	Data input from bus
16	B.CLK IN	I	Clock input from bus
17	B.DATA OUT	O	Data output to bus (Normally "H")
18	B. CLK OUT	O	Clock output to bus (Normally "L")
19	CHECK & SURR	O	POWER ON mode: Output for SUR ON/OFF (During POWER ON: "H") POWER OFF mode: Demultipler output for clock control
20	POWER & IJO	I/O	Power control output (During POWER ON: "H") Heat detection input (Unusual situation: "H")
21	/TUNER	O	Audio muting 2 signal output (Volume of −70dB and less: "H")
22	TUNER	O	Selector TUNER output (Output in level: "H")
23	VR. JOG B	I	Rotary encoder input for main volume
24	VR. JOG A		
25	RC	I	Input for remote control
26	AC IN	I	AC power source input terminal for an electricity failure/clock

Pin No.	Terminal Name	I/O	Function
27	/RESET	I	Reset input terminal
28	10V	I	Power source for pull up (+10V)
29	NC	–	Not connection
30	XIN	I	Connected to a seramic oscillator for system clock X801 (4.194304MHz)
31	XOUT	O	
32	V_{SS}	–	Connected to GND
33	MIC DET	I	Input for MIC detection (Connection: "L")
34	CS2	I	Input for chip selection
35	CS1		
36	TU. JOG B	I	Rotary encoder input for tuning volume
37	TU. JOG A	I	Rotary encoder input for tuning volume
38	S. MUTE	O	Not used, open
39	C. MUTE	O	Not used, open
40	SURR	O	Not used, open
41 ∫ 50	1G ∫ 2G	O	Grid output for FL display
51 ∫ 67	P17 ∫ P1	O	Segment signal of FL display
68	CLK4	O	Serial data output
69 ∫ 72	V.BASS CONT4 CONT3 CONT1	–	Not used, connected to power supply
73	V_{DD} BACK-UP	I	+5V impression
74	VP	–	−VP impression for FL display
75	D. GND	–	Connected to GND
76	VREF	–	Standard voltage for A/D converter (Connected to V_{CC})
77	TU. MUTE	O	Muting control terminal
78 • 79	CE3 • CE2	O	Chip enable terminal
80	NC	–	Not connection

■ SCHEMATIC DIAGRAM

(Parts list of pages 28～31.)

(This schematic diagram may be modified at any time with the development of new technology.)

Notes 1:

- **S801** : Play timer (PLAY) switch.
- **S802** : Record timer (REC) switch.
- **S803** : LW/MW (LW/MW) switch.
- **S804** : FM (FM) switch.
- **S805～807**: Internal source input select switches. [S805: CD, S806: TAPE, S807: PHONO]
- **S808** : External source input select (DCC) switch.
- **S809** : Tuning mode select (TUNING MODE) switch.
- **S810, 811** : Clock/Timer (CLOCK/TIMER) switches. [S810: MODE, S811: SET]
- Signal line
  - : REC out signal (Lch)
  - : AM (LW/MW) OSC signal
  - : AM (LW/MW) signal
  - : Positive voltage lines
  - : Negative voltage lines
  - : FM OSC signal
  - : FM signal
  - : AF signal (Lch)
  - : Surround speaker drive signal
  - : Center speaker drive signal
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used as occation calls. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- All voltage values shown in circuitry are DC voltage in FM signal (Stereo mono) reception mode.

*Figures in ( ) Stand for DC-voltage in MW signal reception mode.

*Figures in 〈 〉 Stand for DC-voltage in LW signal reception mode.

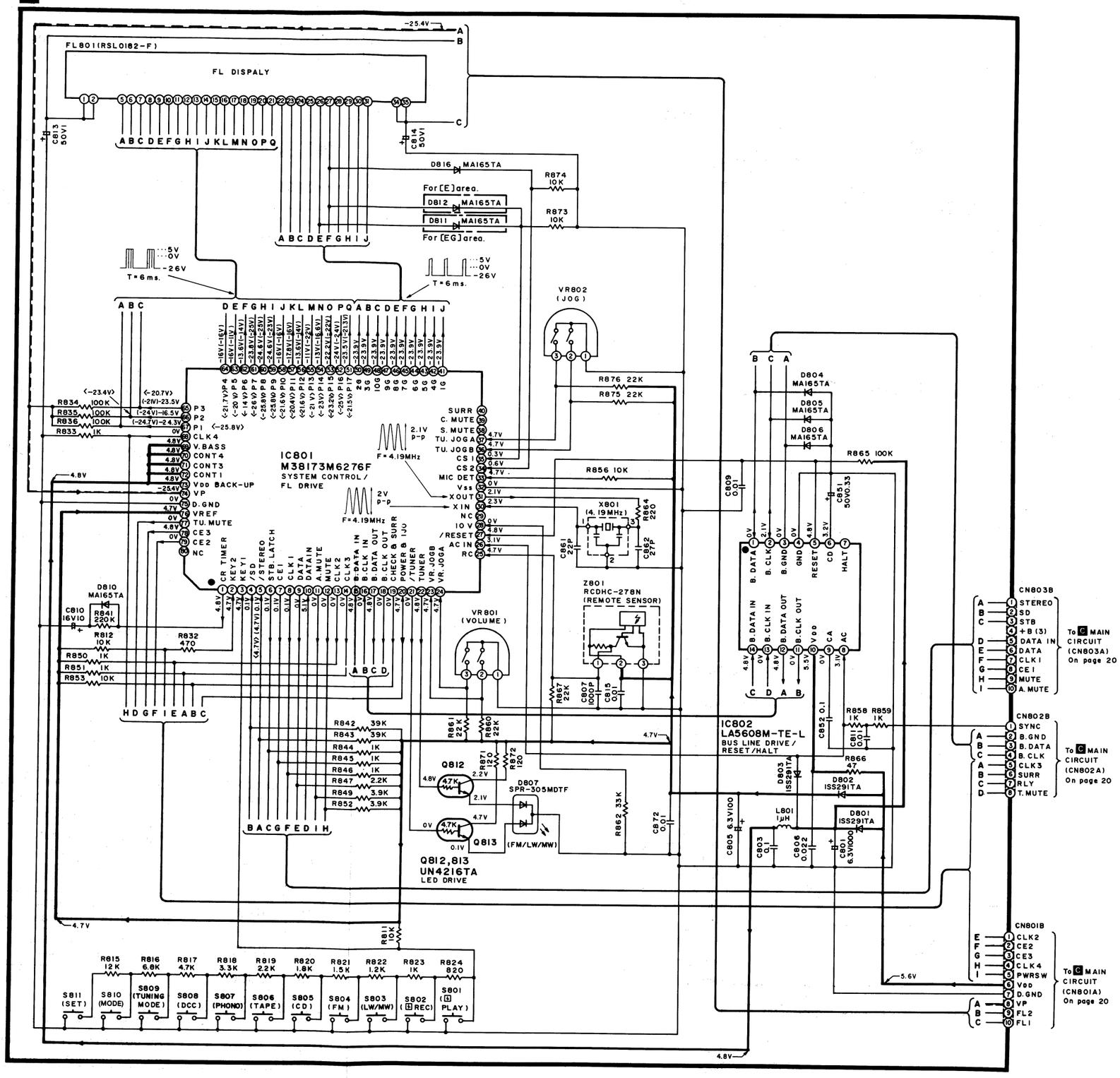
*Figures in ▭ Stand for DC-voltage in muting mode.

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with alminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

B OPERATION CIRCUIT

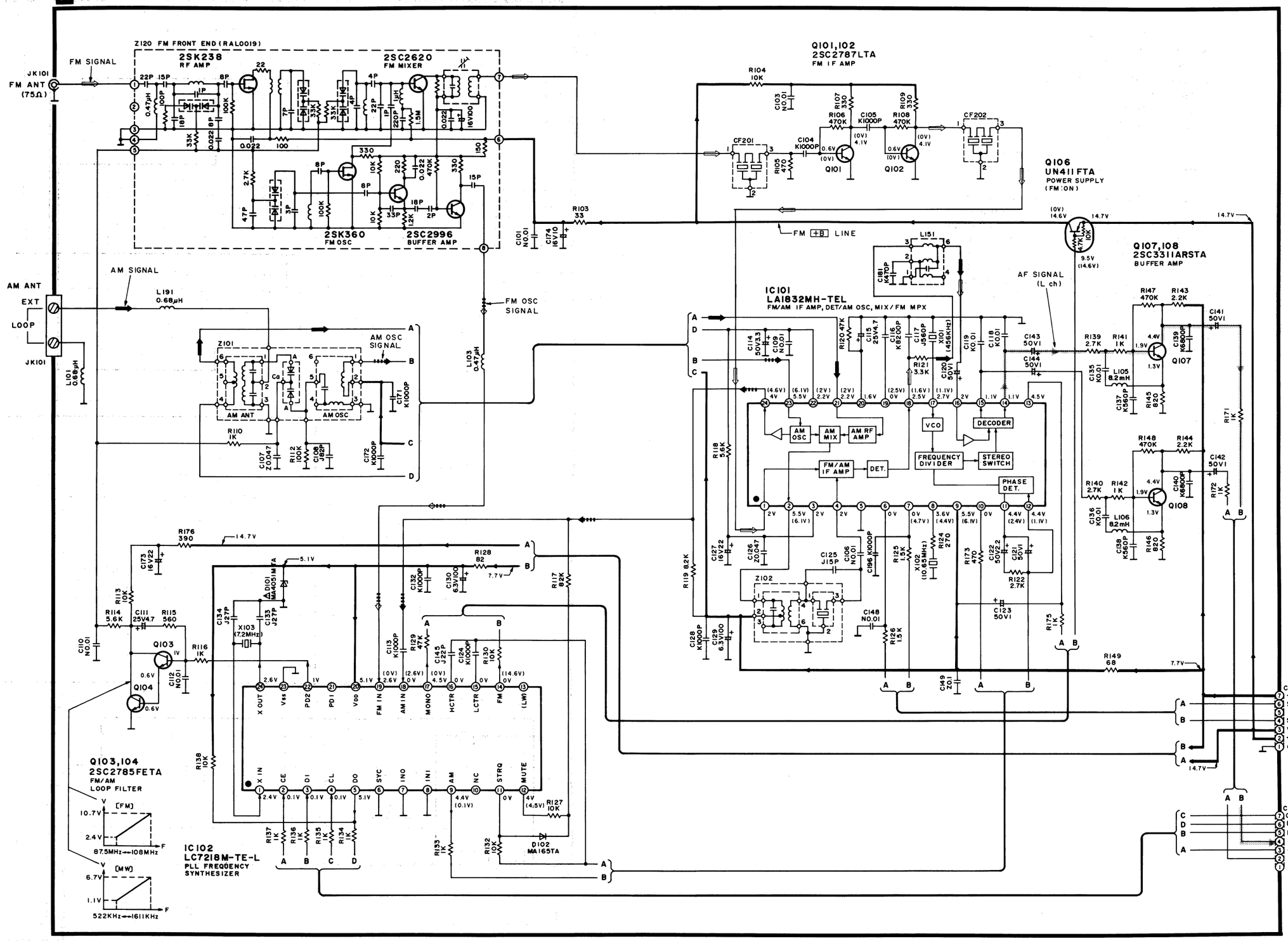


A TUNER CIRCUIT For [E]area.

Z120 FM FRONT END (RAL0006)
FM SIGNAL
2SK544F-AC RF AMP
2SC2786MKTA FM MIXER
2SC2787FLITA FM OSC
2SC2787FKTA BUFFER AMP
JK101 FM ANT (75Ω)
Q101,102 2SC2787LTA FM IF AMP
Q101
Q102
Q106 UN411FTA POWER SUPPLY (FM:ON)
FM +B LINE
FM OSC SIGNAL
AM ANT
EXT
LOOP
JK101
AM (LW/MW) SIGNAL
AM (LW/MW) OSC SIGNAL
Z191
MW ANT
LW ANT
MW OSC
LW OSC
Q191
Q193
Q192
Q191-193 2SC3311ARSTA LW/MW SWITCHING
[FM] 10.7V 2.4V 87.5MHz→108MHz
IC101 LA1832MH-TEL FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
AM OSC
AM MIX
AM RF AMP
VCO
DECODER
FREQUENCY DIVIDER
STEREO SWITCH
FM/AM IF AMP
D.E.T.
PHASE D.E.T.
AF SIGNAL (L ch)
Q107,108 2SC3311ARSTA BUFFER AMP
Q107
Q108
Q103,104 2SC2785FETA FM/AM (LW/MW) LOOP FILTER
Q103
Q104
[LW] 5V 1V 144KHz→288KHz
[MW] 6.7V 1.1V 522KHz→1611KHz
IC102 LC7218M-TE-L PLL FREQUENCY SYNTHESIZER
X IN CE DI CL DO SYC INO INI AM NC STRQ MUTE
D102 MA165TA
CN101B
+B (2)
SD
ST EYE
VT
+B (1)
GND
To A MAIN CIRCUIT (CN101BA) On page 18
CN102B
CL
DO
DI
Lch OUT
CE
Rch OUT
To A MAIN CIRCUIT (CN102BA) On page 18

17 18 19 20 21 22 23 24 25 26 27

A TUNER CIRCUIT For [EG]area.



Notes 2:

- Signal line
  - : REC out signal (Lch)
  - : AM (LW/MW) OSC signal
  - : AM (LW/MW) signal
  - : Positive voltage lines
  - : Negative voltage lines
  - : FM OSC signal
  - : FM signal
  - : AF signal (Lch)
  - : Surround speaker drive signal
  - : Center speaker drive signal
- Important safety notice
  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used as occation calls. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- All voltage values shown in circuitry are DC voltage in FM signal (Stereo mono) reception mode.

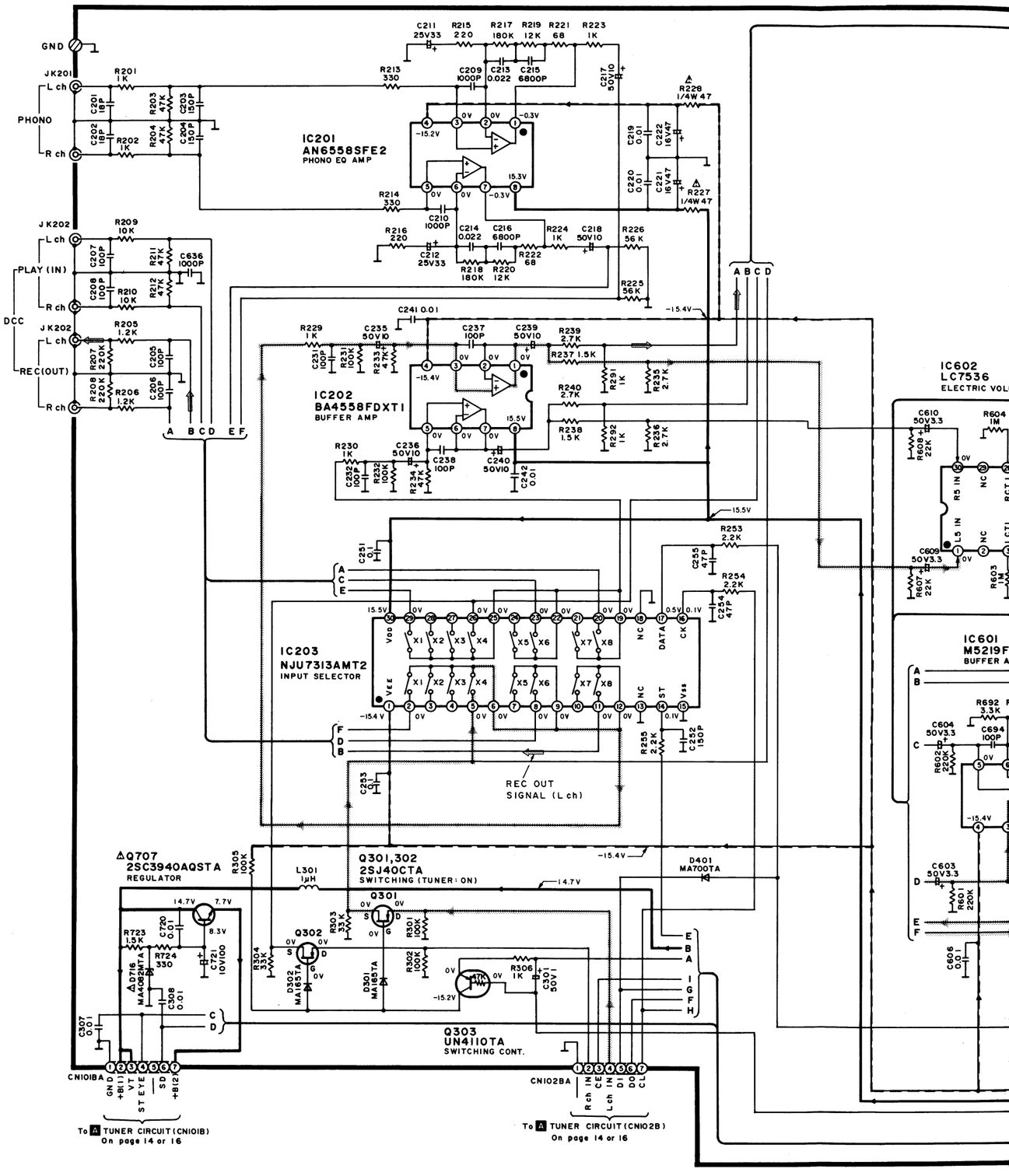
*Figures in ( ) Stand for DC-voltage in MW signal reception mode.

*Figures in 〈 〉 Stand for DC-voltage in LW signal reception mode.

*Figures in ▭ Stand for DC-voltage in muting mode.

- **Caution!**
  IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with alminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

C MAIN CIRCUIT (PHONO EQ AMP/INPUT SELECTOR/ELECTOR VOLUME/BUFFER AMP/MUTING/REGULATOR)



9 10 11 12 13 14 15 16 17 18 19

LUME / BUFFER AMP / MUTING / REGULATOR)

IC602
LC7536
ELECTRIC VOLUME

IC601
M5219FPTA
BUFFER AMP

IC603
M5219FPTA
BUFFER AMP

Q601,602
2SD2144STA
MUTING

Q603,604
2SC3327ABTP
MUTING

Q605,606
UN4115TA
MUTING CONT.

Q701
2SD2037EFTA
VIRTUAL BATTERY

Q703
2SK330GRYTA
VIRTUAL BATTERY

D701-704
RLIN4003N02

Q702
2SB1357EFTA
VIRTUAL BATTERY

Q704
2SJ105GRYTA
VIRTUAL BATTERY

Q705
2SD592STA
RELAY DRIVE

Q706
2SD2037EFTA
REGULATOR

Q708
2SB621ARSTA
REGULATOR

JK601
L ch
A.GND
R ch
REC L ch
REC R ch
DC GND
AC
B.DATA
CT
B.CLK
AC
To SL-CA1060 : JK801 On page 21

JK602
AC
RLT
CT
AC
T.GND
PWR SW
A.GND
SE R ch
SE L ch
+B
D.GND
CLK
DATA
To SE-CA1060 : JK201 On page 9

CN801A
CK 2
CE 2
CE 3
CLK 4
PWR SW
Vdd
D.GND
VP
FL 2
FL 1
To B OPERATION CIRCUIT (CN801B) On page 12

CN802A
SYNC
B.GND
B.DATA
B.CLK
CLK 3
SURR
RLY
T.MUTE
To B OPERATION CIRCUIT (CN802B) On page 12

CN803A
STEREO
SD
STB
+B(3)
DATA IN
DATA
CLK I
CE I
MUTE
A.MUTE
To B OPERATION CIRCUIT (CN803B) On page 12

POWER SUPPLY POINT
AC11V AC11V CT
E901
E902

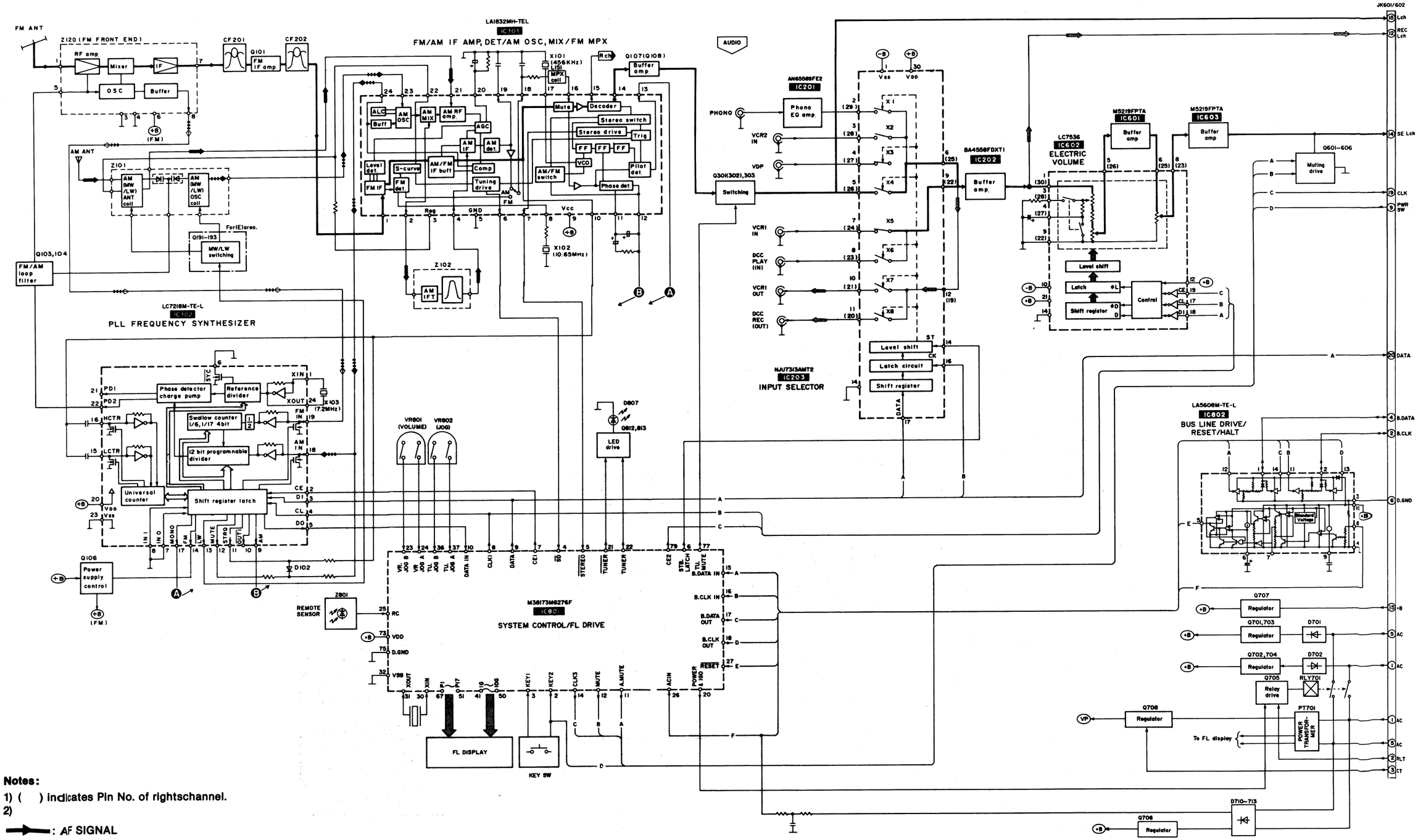
TP701 TP702 TP703 TP704

SHORT: POWER "ON"
(Vdd)

D401
MA700TA

D451
MA405IMTA

■ BLOCK DIAGRAM



Notes:

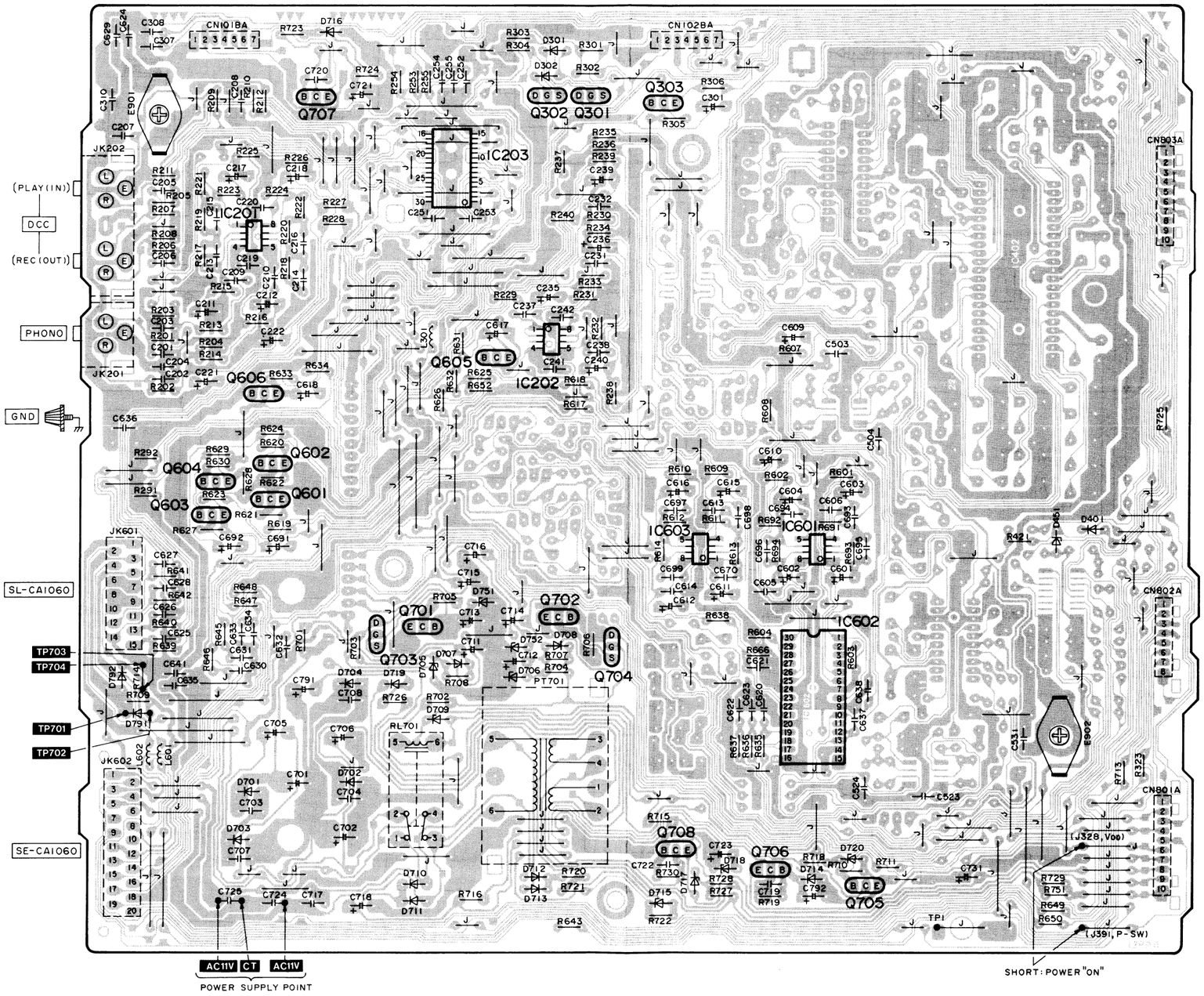
1) ( ) indicates Pin No. of rightschannel.

2)

- ▬▶ : AF SIGNAL
- ▭▷ : FM SIGNAL
- ▬▶ : AM (LW/MW) SIGNAL
- ▯▯▯▷ : FM OSC SIGNAL
- ▮▮▮▶ : AM (LW/MW) SIGNAL
- ▨▷ : REC OUT SIGNAL

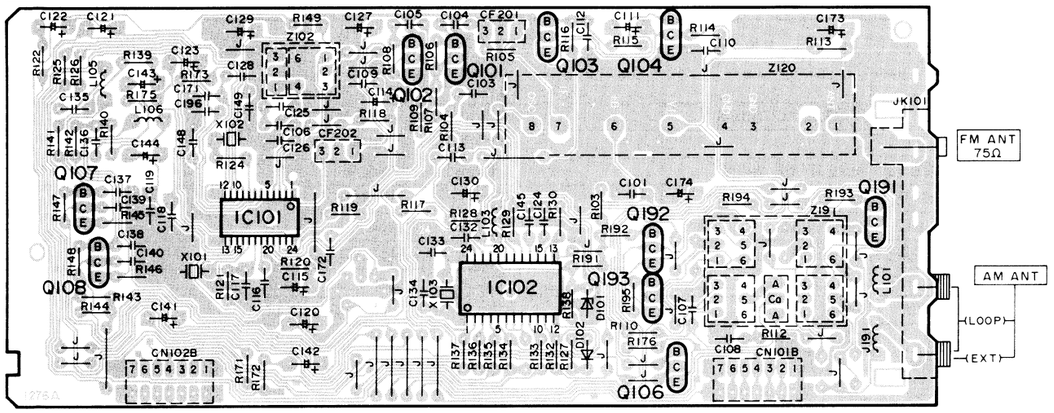
■PRINTED CIRCUIT BOARDS

C MAIN P.C.B. (REPI926A-M)

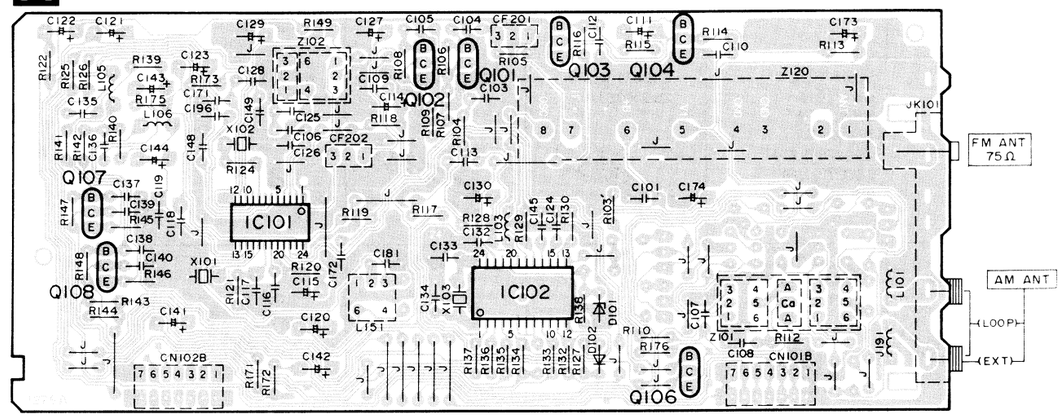


11 12 13 14 15 16 17 18 19

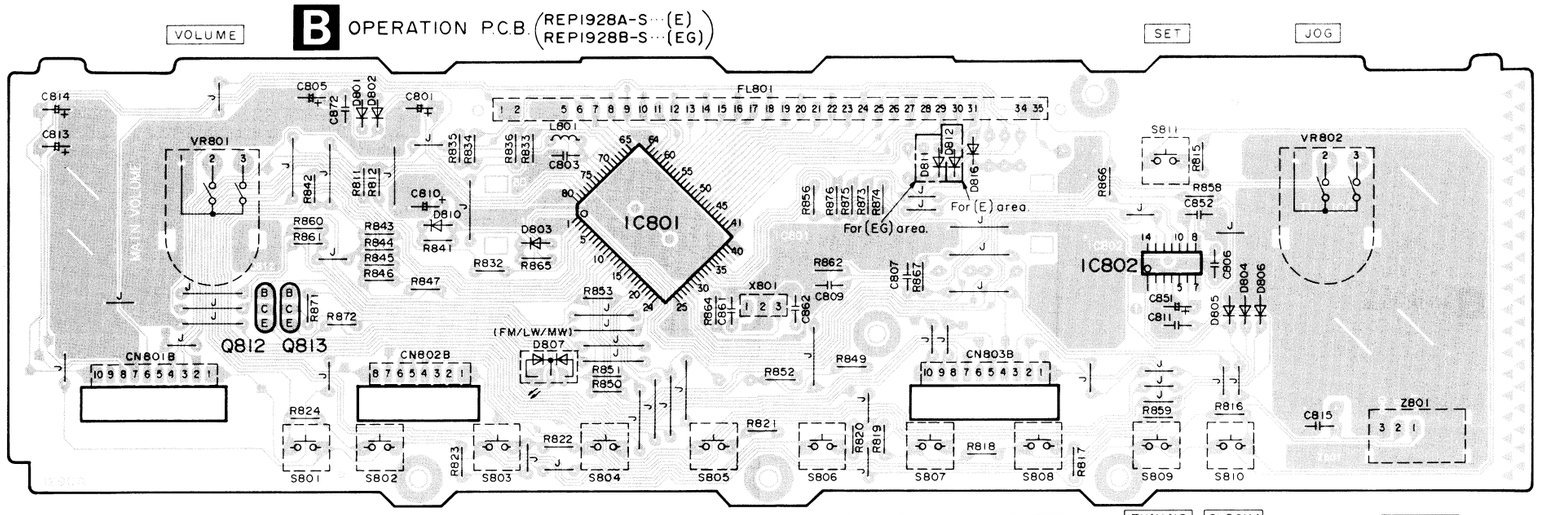
A TUNER P.C.B. For (E) area. (REPI930A-T)



A TUNER P.C.B. For (EG) area. (REPI930B-T)

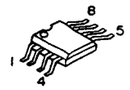


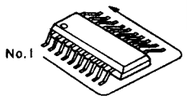
B OPERATION P.C.B. (REPI928A-S···(E) / REPI928B-S···(EG))



■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

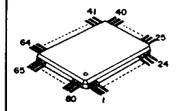
BA4558FDXT1



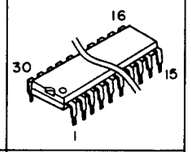


M5219FPTA	8Pin	LA1832MH-TEL	24Pin
AN6558SFE2	8Pin	LC7218M-TE-L	24Pin
LA5608M-TE-L	14Pin	NJU7313AMT2	30Pin

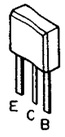
M38173M6276F



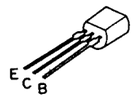
LC7536



UN411FTA
UN4110TA
UN4115TA
UN4216TA
2SC2785FETA
2SC2787LTA
2SC3311ARSTA

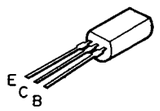


2SB621ARSTA
2SD592STA

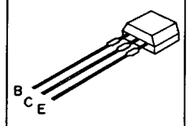


2SC3327ABTP

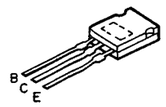
2SC3940AQSTA



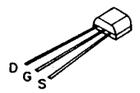
2SD2144STA



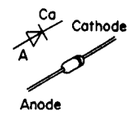
2SB1357EFTA
2SD2037EFTA



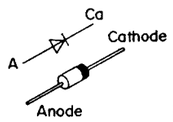
2SJ40CTA
2SJ105GRYTA
2SK330GRYTA

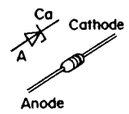


MA165TA



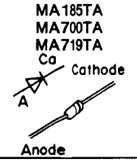
RL1N4003N02

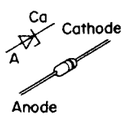




MA4039MTA
MA4051MTA
MA4062HTA
MA4082MTA

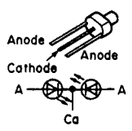
1SS291TA
MA185TA
MA700TA
MA719TA



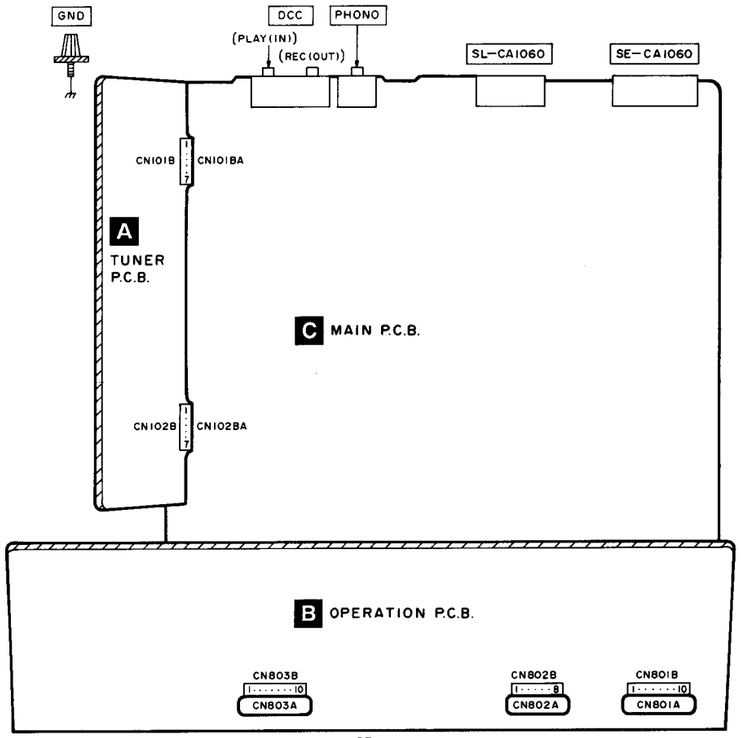


MA4100MTA
MA4120MTA
MA4140MTA
MA4150MTA
MA4270MTA

SPR-305MDTF



■ WIRING CONNECTION DIAGRAM



■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC101	LA1832MH-TEL	FM/AM IF AMP. /AM OSC	
IC102	LC7218M-TE-L	PLL FREQ SYNTHESIZER	
IC201	AN6558SFE2	PHONO EQ AMP	
IC202	BA4558FDXT1	BUFFER AMP.	
IC203	NJU7313AMT2	INPUT SELECTOR	
IC601	M5219FPTA	BUFFER AMP	
IC602	LC7536	ELECTRONIC VOLUME	
IC603	M5219FPTA	BUFFER AMP	
IC801	M38173M6276F	SYSTEM CONT. /FL DRIVE	
IC802	LA5608M-TE-L	BUS LINE/HALT/RESET	
		TRANSISTOR(S)	
Q101, 102	2SC2787L	TRANSISTOR	
Q103, 104	2SC2785FE	TRANSISTOR	
Q106	UN411FTA	TRANSISTOR	
Q107, 108	2SC3311ARSTA	TRANSISTOR	
Q191-193	2SC3311ARSTA	TRANSISTOR	(E)
Q301, 302	2SJ40CTA	TRANSISTOR	
Q303	UN4110TA	TRANSISTOR	
Q601, 602	2SD2144S	TRANSISTOR	
Q603, 604	2SC3327-A	TRANSISTOR	
Q605, 606	UN4115	TRANSISTOR	
Q701	2SD2037EFTA	TRANSISTOR	⚠
Q702	2SB1357EFTA	TRANSISTOR	⚠
Q703	2SK330GRYTA	TRANSISTOR	⚠
Q704	2SJ105GRYTA	TRANSISTOR	⚠
Q705	2SD592NCR	TRANSISTOR	
Q706	2SD2037EFTA	TRANSISTOR	⚠
Q707	2SC3940AQSTA	TRANSISTOR	⚠
Q708	2SB621A-R	TRANSISTOR	⚠
Q812, 813	UN4216-S	TRANSISTOR	
		DIODE(S)	
D101	MA4051MTA	DIODE	⚠
D102	MA165	DIODE	
D301, 302	MA165	DIODE	
D401	MA700TA	DIODE	
D451	MA4051MTA	DIODE	
D701-704	RL1N4003N02	DIODE	⚠
D705, 706	MA4140M	DIODE	⚠
D707, 708	MA165	DIODE	
D709	MA4120	DIODE	
D710, 711	RL1N4003N02	DIODE	⚠
D712, 713	MA185TA	DIODE	⚠
D714	MA4062-H	DIODE	⚠
D715	MA4051MTA	DIODE	⚠
D716	MA4082MTA	DIODE	⚠
D717	MA4039MTA	DIODE	⚠
D718	MA4270	DIODE	⚠
D719	RL1N4003N02	DIODE	⚠
D720	MA4100MTA	DIODE	⚠
D751, 752	MA4150M	DIODE	⚠
D791, 792	MA719TA	DIODE	
D801-803	1SS291TA	DIODE	
D804-806	MA165	DIODE	
D807	SPR-305MDTF	L. E. D.	
D810	MA165	DIODE	
D811	MA165	DIODE	(EG)
D812	MA165	DIODE	(E)
D816	MA165	DIODE	
		VARIABLE RESISTOR(S)	
VR801, 802	EVQW2BF2024B	VOLUME/JOG CONTROL	
		COIL(S)	
L101	ELESNR68MA	COIL	
L103	ELEXTR47MA9	COIL	
L105, 106	ELELN822KL	COIL	
L151	SLM1B10-1M	COIL	(EG)
L191	ELESNR68MA	COIL	
L301	ELEXT1R0KA9	COIL	
L601, 602	ELEXT101KA9	COIL	
L801	ELEXT1R0KA9	COIL	
		TRANSFORMER(S)	
PT701	RTP114G004	POWER TRANSFORMER	⚠
		COMPONENT COMBINATION(S)	
Z101	RLA2Z002M-T	COMPONENT COMBINATION	(EG)
Z102	RLI2Z006M-T	COMPONENT COMBINATION	
Z191	RLA6Z005M-T	COMPONENT COMBINATION	(E)
Z801	RCDHC-278N	REMOTE SENSOR	

Ref. No.	Part No.	Part Name & Description	Remarks
		FILTER(S)	
CF201, 202	RLFFETWND01M	CERAMIC FILTER	(E)
CF201	RLFFETNGD01L	CERAMIC FILTER	(EG)
CF202	RLFFETMGD01L	CERAMIC FILTER	(EG)
		OSCILLATOR(S)	
X101	RSXZ456KM07M	OSCILLATOR(456KHz)	
X102	RLFDGTD01I	OSCILLATOR(10.7MHz)	
X103	RSXC7M20S04T	OSCILLATOR(7.2MHz)	
X801	RSXA4M19S03	OSCILLATOR(4.19MHz)	
		DISPLAY TUBE(S)	
FL801	RSL0182-F	FL DISPLAY	
		FM FRONT END PACK ASS'Y(S)	
Z120	RAL0006	FM FRONT END	(E)
Z120	RAL0019	FM FRONT END	(EG)
		SWITCH(ES)	
S801	EVQ21405R	TIMER PLAY	
S802	EVQ21405R	TIMER REC	
S803	EVQ21405R	AM	
S804	EVQ21405R	FM	
S805	EVQ21405R	CD	
S806	EVQ21405R	TAPE	
S807	EVQ21405R	PHONO	
S808	EVQ21405R	DCC	
S809	EVQ21405R	TUNING MODE	
S810	EVQ21405R	CLOCK/TIMER MODE	
S811	EVQ21405R	CLOCK/TIMER SET	
		RELAY(S)	
RL701	RSY0017M-0	RELAY	⚠
		CONNECTOR(S) AND SOCKET(S)	
CN101B	RJU057W007	SOCKET(7P)	
CN101BA	RJT057W007-1	CONNECTOR(7P)	
CN102B	RJU057W007	SOCKET(7P)	
CN102BA	RJT057W007-1	CONNECTOR(7P)	
CN801A	RJU003K010M1	SOCKET(10P)	
CN801B	RJT003K010-1	CONNECTOR(10P)	
CN802A	RJU003K008M1	SOCKET(8P)	
CN802B	RJT003K008-1	CONNECTOR(8P)	
CN803A	RJU003K010M1	SOCKET(10P)	
CN803B	RJT003K010-1	CONNECTOR(10P)	

Ref. No.	Part No.	Part Name & Description	Remarks
		JACK(S)	
JK101	RJH5210	ANTENNA TERMINAL	
JK201	SJF3068-7N	PHONO	
JK202	SJF3069-5N	DAT/DCC	
JK601	RJT065K15	CONNECTOR(15P)	
JK602	RJT065K20	CONNECTOR(20P)	
		EARTH TERMINAL(S)	
E901, 902	SNE1004-2	GND PLATE	

■ RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K = 1,000 (OHM), 1M = 1,000k (OHM)

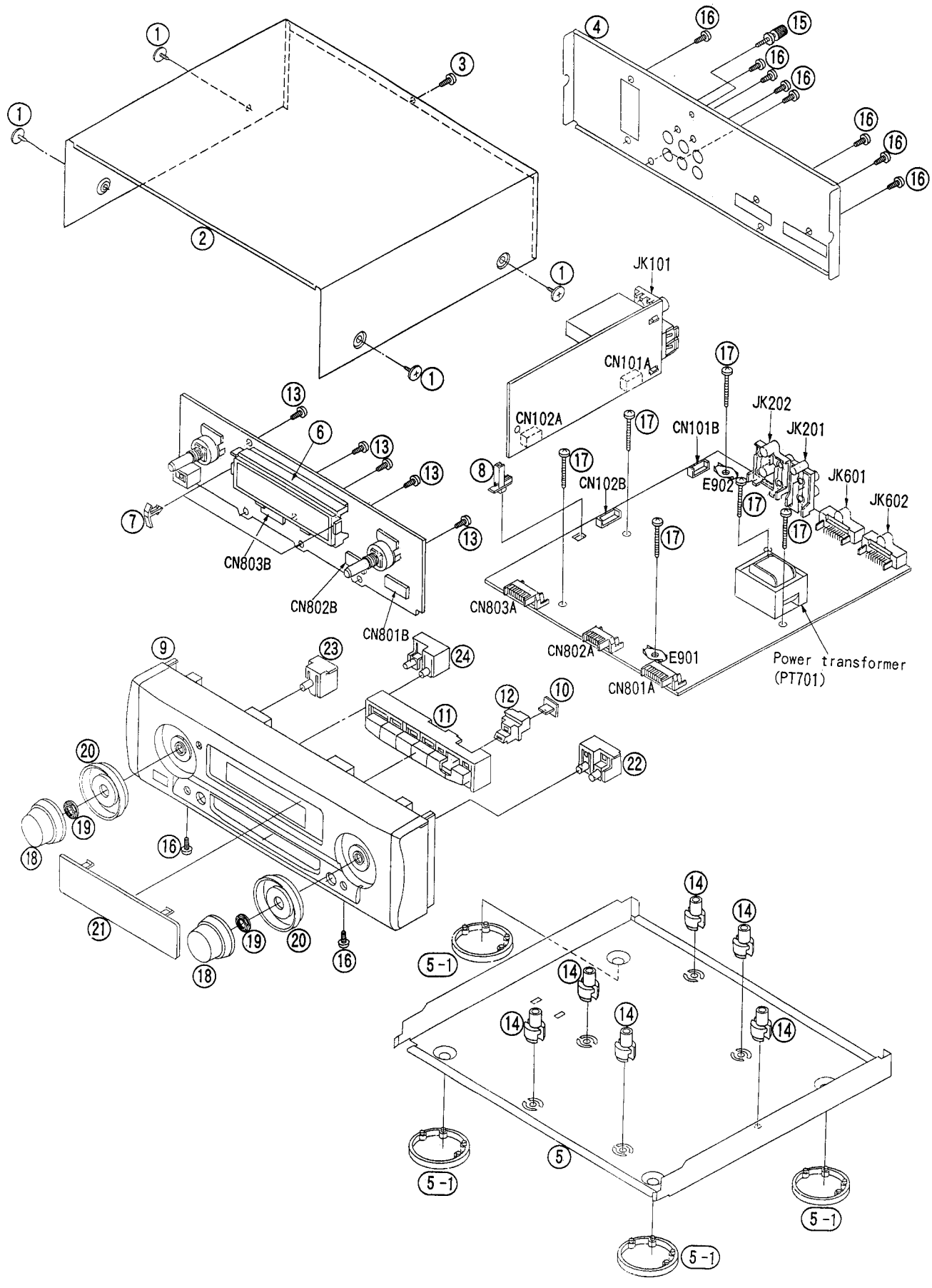
Ref. No.	Part No.	Values & Remarks
		RESISTORS
R103	ERDS2TJ271	1/4W 270 (E)
R103	ERDS2TJ330	1/4W 33 (EG)
R104	ERDS2TJ822	1/4W 8.2K (E)
R104	ERDS2TJ103	1/4W 10K (EG)
R105	ERDS2TJ471	1/4W 470
R106	ERDS2TJ474	1/4W 470K
R107	ERDS2TJ331	1/4W 330
R108	ERDS2TJ474	1/4W 470K
R109	ERDS2TJ331	1/4W 330
R110	ERDS2TJ102	1/4W 1K
R112	ERDS2TJ104	1/4W 100K
R113	ERDS2TJ103	1/4W 10K
R114	ERDS2TJ562	1/4W 5.6K
R115	ERDS2TJ561	1/4W 560
R116	ERDS2TJ102	1/4W 1K
R117	ERDS2TJ273	1/4W 27K (E)
R117	ERDS2TJ823	1/4W 82K (EG)
R118	ERDS2TJ562	1/4W 5.6K
R119	ERDS2TJ682T	1/4W 6.8K (E)
R119	ERDS2TJ822	1/4W 8.2K (EG)
R120	ERDS2TJ473	1/4W 47K
R121	ERDS2TJ332	1/4W 3.3K
R122	ERDS2TJ272T	1/4W 2.7K
R124	ERDS2TJ271	1/4W 270
R125, 126	ERDS2TJ152	1/4W 1.5K
R127	ERDS2TJ103	1/4W 10K
R128	ERDS2TJ820	1/4W 82
R129	ERDS2TJ473	1/4W 47K
R130	ERDS2TJ103	1/4W 10K
R132	ERDS2TJ103	1/4W 10K
R133-137	ERDS2TJ102	1/4W 1K
R138	ERDS2TJ103	1/4W 10K
R139, 140	ERDS2TJ272T	1/4W 2.7K
R141, 142	ERDS2TJ102	1/4W 1K
R143, 144	ERDS2TJ222	1/4W 2.2K
R145, 146	ERDS2TJ102	1/4W 1K (E)
R145, 146	ERDS2TJ821	1/4W 820 (EG)
R147, 148	ERDS2TJ474	1/4W 470K
R149	ERDS2TJ680T	1/4W 68
R171, 172	ERDS2TJ102	1/4W 1K
R173	ERDS2TJ471	1/4W 470
R175	ERDS2TJ102	1/4W 1K
R176	ERDS2TJ391	1/4W 390
R191	ERDS2TJ103	1/4W 10K (E)
R192	ERDS2TJ122	1/4W 1.2K (E)
R193	ERDS2TJ182	1/4W 1.8K (E)
R194	ERDS2TJ122	1/4W 1.2K (E)
R195	ERDS2TJ222	1/4W 2.2K (E)
R201, 202	ERDS2TJ102	1/4W 1K
R203, 204	ERDS2TJ473	1/4W 47K
R205, 206	ERDS2TJ122	1/4W 1.2K
R207, 208	ERDS2TJ224T	1/4W 220K
R209, 210	ERDS2TJ103	1/4W 10K
R211, 212	ERDS2TJ473	1/4W 47K
R213, 214	ERDS2TJ331	1/4W 330
R215, 216	ERDS2TJ221	1/4W 220
R217, 218	ERDS2TJ184T	1/4W 180K
R219, 220	ERDS2TJ123	1/4W 12K
R221, 222	ERDS2TJ680T	1/4W 68
R223, 224	ERDS2TJ102	1/4W 1K
R225, 226	ERDS2TJ563	1/4W 56K
R227, 228	ERD25FJ470	1/4W 47 ⚠
R229, 230	ERDS2TJ102	1/4W 1K
R231, 232	ERDS2TJ104	1/4W 100K
R233, 234	ERDS2TJ473	1/4W 47K
R235, 236	ERDS2TJ272T	1/4W 2.7K
R237, 238	ERDS2TJ152	1/4W 1.5K
R239, 240	ERDS2TJ272T	1/4W 2.7K
R253-255	ERDS2TJ222	1/4W 2.2K
R291, 292	ERDS2TJ102	1/4W 1K
R301, 302	ERDS2TJ104	1/4W 100K
R303, 304	ERDS2TJ333	1/4W 33K
R305	ERDS2TJ104	1/4W 100K
R306	ERDS2TJ102	1/4W 1K
R323	ERDS2TJ102	1/4W 1K
R421	ERDS2TJ332	1/4W 3.3K
R601, 602	ERDS2TJ224T	1/4W 220K
R603, 604	ERDS2TJ105T	1/4W 1M
R607, 608	ERDS2TJ223	1/4W 22K
R609, 610	ERDS2TJ473	1/4W 47K
R611, 612	ERDS2TJ222	1/4W 2.2K
R613, 614	ERDS2TJ682T	1/4W 6.8K
R617, 618	ERDS2TJ102	1/4W 1K
R619, 620	ERDS2TJ331	1/4W 330
R621, 622	ERDS2TJ104	1/4W 100K
R623, 624	ERDS2TJ222	1/4W 2.2K
R625, 626	ERDS2TJ102	1/4W 1K
R627, 628	ERDS2TJ104	1/4W 100K
R629, 630	ERDS2TJ102	1/4W 1K
R631	ERDS2TJ472	1/4W 4.7K
R632	ERDS2TJ105T	1/4W 1M
R633	ERDS2TJ472	1/4W 4.7K
R634	ERDS2TJ334	1/4W 330K
R635-637	ERDS2TJ272T	1/4W 2.7K
R638-643	ERDS2TJ102	1/4W 1K
R645-648	ERDS2TJ471	1/4W 470
R649, 650	ERDS2TJ102	1/4W 1K
R652	ERDS2TJ334	1/4W 330K
R666	ERDS2TJ561	1/4W 560
R691, 692	ERDS2TJ332	1/4W 3.3K
R693, 694	ERDS2TJ562	1/4W 5.6K
R701, 702	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R703, 704	ERDS2TJ332	1/4W 3.3K
R705, 706	ERG1SJ100E	1W 10
R707, 708	ERDS2TJ105T	1/4W 1M
R709	ERDS2TJ101	1/4W 100
R710, 711	ERDS2TJ153	1/4W 15K
R713, 714	ERDS2TJ100	1/4W 10
R715	ERG1SJ100E	1W 10
R716	ERD25FJ2R2	1/4W 2.2 ⚠
R718	ERDS2TJ102	1/4W 1K
R719-721	ERDS2TJ332	1/4W 3.3K
R722	ERDS2TJ103	1/4W 10K
R723	ERDS2TJ152	1/4W 1.5K
R724	ERDS2TJ331	1/4W 330
R725	ERDS2TJ102	1/4W 1K
R726	ERD2FCVJ4R7T	1/4W 4.7 ⚠
R727, 728	ERDS2TJ151	1/4W 150
R729	ERDS2TJ150T	1/4W 15
R730	ERDS2TJ102	1/4W 1K
R751	ERDS2TJ180T	1/4W 18
R811, 812	ERDS2TJ103	1/4W 10K
R815	ERDS2TJ123	1/4W 12K
R816	ERDS2TJ682T	1/4W 6.8K
R817	ERDS2TJ472	1/4W 4.7K
R818	ERDS2TJ332	1/4W 3.3K
R819	ERDS2TJ222	1/4W 2.2K
R820	ERDS2TJ182	1/4W 1.8K
R821	ERDS2TJ152	1/4W 1.5K
R822	ERDS2TJ122	1/4W 1.2K
R823	ERDS2TJ102	1/4W 1K
R824	ERDS2TJ821	1/4W 820
R832	ERDS2TJ471	1/4W 470
R833	ERDS2TJ102	1/4W 1K
R834-836	ERDS2TJ104	1/4W 100K
R841	ERDS2TJ224T	1/4W 220K
R842, 843	ERDS2TJ393	1/4W 39K
R844-846	ERDS2TJ102	1/4W 1K
R847	ERDS2TJ222	1/4W 2.2K
R849	ERDS2TJ392T	1/4W 3.9K
R850, 851	ERDS2TJ102	1/4W 1K
R852	ERDS2TJ392T	1/4W 3.9K
R853	ERDS2TJ103	1/4W 10K
R856	ERDS2TJ103	1/4W 10K

Ref. No.	Part No.	Values & Remarks
R858, 859	ERDS2TJ102	1/4W 1K
R860, 861	ERDS2TJ223	1/4W 22K
R862	ERDS2TJ333	1/4W 33K
R864	ERDS2TJ221	1/4W 220
R865	ERDS2TJ104	1/4W 100K
R866	ERDS2TJ470	1/4W 47
R867	ERDS2TJ223	1/4W 22K
R871, 872	ERDS2EJ121	1/4W 120
R873, 874	ERDS2TJ103	1/4W 10K
R875, 876	ERDS2TJ223	1/4W 22K
		CAPACITORS
C101	ECBT1C103NS5	16V 0.01U
C103	ECBT1C103NS5	16V 0.01U
C104, 105	ECBT1H102KB5	50V 1000P
C106	ECBT1C103NS5	16V 0.01U
C107	ECBT1H473ZF5	50V 0.047U
C108	ECBT1H100JC5	50V 10P (E)
C108	ECBT1H8R2JC5	50V 8.2P (EG)
C109, 110	ECBT1C103NS5	16V 0.01U
C111	ECEA1EKA4R7B	25V 4.7U
C112	ECBT1C103NS5	16V 0.01U
C113	ECBT1H102KB5	50V 1000P
C114	ECEA1HKA3R3B	50V 3.3U
C115	ECEA1EKA4R7B	25V 4.7U
C116	ECBT1C822KS5	16V 8200P
C117	ECQB1H102JF3	50V 1000P (E)
C117	ECQB1H561JF3	50V 560P (EG)
C118, 119	ECFR1C103KR	16V 0.01U
C120, 121	ECEA1HKA010B	50V 1U
C122	ECEA1HKA2R2B	50V 2.2U
C123	ECEA1HKA010B	50V 1U
C124	ECBT1H102KB5	50V 1000P
C125	ECBT1H150JC5	50V 15P
C126	ECBT1H473ZF5	50V 0.047U
C127	ECEA1CKA220B	16V 22U
C128	ECBT1H102KB5	50V 1000P
C129, 130	ECEA0JKA101B	6.3V 100U
C132	ECBT1H102KB5	50V 1000P
C133, 134	ECBT1H270JU5	50V 27P
C135, 136	ECBT1C103KS5	16V 0.01U
C137, 138	ECBT1H561KB5	50V 560P
C139, 140	ECBT1C562KR5	16V 5600P (E)
C139, 140	ECBT1C682KR5	16V 6800P (EG)
C141-144	ECEA1HKA010B	50V 1U
C145	ECBT1H220JC5	50V 22P
C148	ECBT1C103NS5	16V 0.01U
C149	ECBT1H104ZF5	50V 0.1U
C171, 172	ECBT1H102KB5	50V 1000P
C173	ECEA1CKA220B	16V 22U
C174	ECEA1CKA100B	16V 10U

Ref. No.	Part No.	Values & Remarks
C181	ECBT1H471KB5	50V 470P (EG)
C196	ECBT1H102KB5	50V 1000P
C201, 202	ECBT1H180J5	50V 18P
C203, 204	ECBT1H151KB5	50V 150P
C205-208	ECBT1H101KB5	50V 100P
C209, 210	ECBT1H102KB5	50V 1000P
C211, 212	ECA1EAP330B	25V 33U
C213, 214	ECQB1H223JF3	50V 0.022U
C215, 216	ECBT1C682KR5	16V 6800P
C217, 218	ECA1HAP100B	50V 10U
C219, 220	ECBT1E103ZF	25V 0.01U
C221, 222	ECEA1CKA470B	16V 47U
C231, 232	ECBT1H101KB5	50V 100P
C235, 236	ECA1HAP100B	50V 10U
C237, 238	ECBT1H101KB5	50V 100P
C239, 240	ECA1HAP100B	50V 10U
C241, 242	ECBT1E103ZF	25V 0.01U
C251	ECBT1H104ZF5	50V 0.1U
C252	ECBT1H151KB5	50V 150P
C253	ECBT1H104ZF5	50V 0.1U
C254, 255	ECBT1H470J5	50V 47P
C301	ECEA1HKA010B	50V 1U
C307, 308	ECBT1C103NS5	16V 0.01U
C310	ECQV1H104JM3	50V 0.1U
C503, 504	ECBT1E103ZF	25V 0.01U
C523, 524	ECBT1E103ZF	25V 0.01U
C531	ECBT1H102KB5	50V 1000P
C601-604	ECA1HAP3R3B	50V 3.3U
C605, 606	ECBT1E103ZF	25V 0.01U
C609-612	ECA1HAP3R3B	50V 3.3U
C613, 614	ECBT1E103ZF	25V 0.01U
C615, 616	ECA1HAP3R3B	50V 3.3U
C617	ECEA1CKA100B	16V 10U
C618	ECEA1CKA220B	16V 22U
C620	ECBT1H151KB5	50V 150P
C621	ECBT1H104ZF5	50V 0.1U
C622, 623	ECBT1H220J5	50V 22P
C624	ECBT1E103ZF	25V 0.01U
C625-628	ECBT1H101KB5	50V 100P
C629	ECBT1E103ZF	25V 0.01U
C630, 631	ECBT1H101KB5	50V 100P
C632	ECBT1E103ZF	25V 0.01U
C633, 634	ECBT1H101KB5	50V 100P
C635, 636	ECBT1H102KB5	50V 1000P
C637, 638	ECBT1H104ZF5	50V 0.1U
C641	ECBT1H102KB5	50V 1000P
C670	ECBT1H101KB5	50V 100P
C691, 692	ECA1HAP100B	50V 10U
C693, 694	ECBT1H101KB5	50V 100P
C695, 696	ECBT1H221KB5	50V 220P
C697-699	ECBT1H101KB5	50V 100P
C701, 702	ECA1VM471B	35V 470U ⚠

Ref. No.	Part No.	Values & Remarks
C703, 704	ECKR1H103ZF5	50V 0.01U
C705	ECA1EM102B	25V 1000U
C706	ECA1EM471B	25V 470U
C707, 708	ECKR1H103ZF5	50V 0.01U
C711, 712	ECA1HAP3R3B	50V 3.3U
C713-716	ECA1CAP470B	16V 47U
C717	ECBT1H104ZF5	50V 0.1U
C718	RCE1EM471BV	25V 470U ⚠
C719, 720	ECBT1E103ZF	25V 0.01U
C721	ECEA1AKA101B	10V 100U
C722	ECBT1E103ZF	25V 0.01U
C723	ECEA1HKA100B	50V 10U
C724, 725	ECKT1H223ZF	50V 0.022U
C731	ECEA1VKA100B	35V 10U
C791	RCE1HM221BV	50V 220U
C792	ECEA1CKA100B	16V 10U
C801	ECEA0JU102	6.3V 1000U
C803	ECBT1H104ZF5	50V 0.1U
C805	ECEA0JKA101B	6.3V 100U
C806	ECBT1E223ZF	25V 0.022U
C807	ECBT1H102KB5	50V 1000P
C809	ECBT1E103ZF	25V 0.01U
C810	ECEA1CKA100B	16V 10U
C811	ECBT1E103ZF	25V 0.01U
C813, 814	ECEA1HKA010B	50V 1U
C815	ECBT1E103ZF	25V 0.01U
C851	ECEA1HKAR33B	50V 0.33U
C852	ECQV1H104JM3	50V 0.1U
C861	ECBT1H220GC5	50V 22P
C862	ECBT1H270JU5	50V 27P
C872	ECBT1E103ZF	25V 0.01U

■CABINET PARTS LOCATION



■ REPLACEMENT PARTS LIST

Notes: *The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RHD30007	SCREW	
2	RKM0203A-2K	CABINET	
3	XTB3+8JFZ	SCREW	
4	RGR0194A-A2	REAR PANEL	(E)
4	RGR0194A-B	REAR PANEL	(EG)
5	RFKJSCH404EK	BOTTOM BOARD ASS'Y	
5-1	RKA0011-3	FOOT	
6	RMN0194	FL HOLDER	
7	RMN0195	FL SPACER	
8	RMN0203	P.C.B. HOLDER	
9	RFKGTCA1060E	FRONT PANEL ASS'Y	
10	RGL0237-Q	PANEL LIGHT	
11	RFKNT1060EA	INPUT SELECT BUTTON ASS'Y	(E)
11	RFKNT1060EGA	INPUT SELECT BUTTON ASS'Y	(EG)
12	RFKNT1060EB	PANEL LIGHT BUTTON ASS'Y	(E)
12	RFKNT1060EGB	PANEL LIGHT BUTTON ASS'Y	(EG)
13	XTBS26+8J	SCREW	
14	SHE185-2	P.C.B. SPACER	
15	SNE2123	SCREW	
16	XTBS3+8JFZ1	SCREW	
17	XTB3+16JFZ	SCREW	
18	RGW0206-K	VOLUME KNOB	
19	RHN90001	NUT	
20	RGK0644-S	VOLUME ORNAMENT	
21	RKW0342-V	FL PANEL	
22	RFKNT1060EC	REC/PLAY TIMER BUTTON ASS'Y	
23	RFKNT1060ED	SET BUTTON ASS'Y	
24	RFKNT1060EE	CLOCK/TUN.MODE BUTTON ASS'Y	

Ref. No.	Part No.	Part Name & Description	Remarks

Printed in Japan
H94061250( )H/HH/TN